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June 5, 1995

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JUN 5 1995

Federal Communications Commission
Office of the Secretary
1919 M Street, N.W.
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In re: **Comments of PCTEST Engineering Laboratory, Inc.**
Docket 95-19

Gentlemen:

Transmitted herewith, is the comment of PCTEST Engineering Laboratory, Inc. on the proposed deregulation of digital devices in NPRM Docket 95-19.

If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Randy Ortanez', is written over a horizontal line.

Randy Ortanez
President

enc.

Comments of PCTEST Lab

FAA interference cases to aircraft systems from digital devices

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Before the
Federal Communications Commission
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

COMMENTS OF PCTEST ENGINEERING LABORATORY, INC.
NPRM DOCKET 95-19
June 5, 1995

INTRODUCTION

The following are comments of PCTEST Engineering Laboratory, Inc. in Columbia, Maryland concerning the FCC's proposal to amend Parts 2 and 15 of the Commissions rules to deregulate the equipment authorization requirements for digital devices NPRM ET Docket No. 95-19.

PCTEST Lab possesses a unique perspective in the compliance testing of digital devices. I have been an FCC engineer for over six years and President of PCTEST Engineering Laboratory since 1989. I have tested for FCC compliance more than 4000 digital devices, both as an FCC laboratory engineer and as an independent laboratory engineer. PCTEST Lab is proud that we have had a passing rate of 100% in the FCC sample request program throughout our history.

ALTERNATIVES

We strongly support the FCC and manufacturers' contention that the 35 days or more delay in equipment authorization is too long. We do believe, however, that the FCC very simply could reduce the 35 days or more approval time period without having to change the rules. This can be achieved by streamlining the existing procedures wherein a digital device is granted as soon as it is logged in by the application examiner. The application (FCC Codes JBC and JBP) would not need be assigned to an engineer unless there is a major technical problem or unless the FCC requests a sample of the product. Electronic filing through the Internet should also be implemented. The majority of the products then could obtain a grant within 1 to 2 weeks. In this case, there would be no need to change the rules; only minor administrative procedures internal to FCC would need to be changed. This is the same procedure the FCC have regarding **Part 68 Registration** wherein a telecommunication product is granted **in less than 2 weeks by only one government employee.**

It should be noted that some and perhaps most products have a built-in delay of about 2 weeks anyway due to **other regulatory approvals** (UL, FDA, FCC Part 68), software or firmware debugging, users manual revisions, and production changes. In addition, some manufacturers routinely request for deferral of applications to deliberately delay the grant due to their marketing schedules. We still do believe, however, that approval process for digital devices should not take more than 2 weeks. The FCC in the past had attained speed of service for equipment authorization of less than 2 weeks.

More importantly, as the information I have obtained from the Federal Administration Administration (FAA) suggests (please see the attached FAA interference cases to aircraft systems), the FCC needs to be more vigilant in the enforcement of fines for and investigation of non-compliant devices, especially for portable digital devices. If a passenger seated at 16C using a personal computer was able to alter the airplane navigational equipment by as much as 20 degrees, the public safety must be addressed and the FAA must be consulted prior to adapting any changes or removing the existing FCC equipment authorization program for computers and peripherals.

OTHER ALTERNATIVES

1. **Declaration of Compliance (DoC)** is a good idea but is technically unenforceable unless some fundamental changes are instituted.

a. The **ultimate responsible party** for compliance has to be clearly defined and stated before the DoC can be a viable solution. We agree to the proposal that the responsible party has to be in the United States. In addition, the responsible party for maintenance and warranty must be stated in the application and must reside in the U.S.

b. The **enforcement procedure** has to be resolved and stated before the DoC can be a possible solution. A FCC Internet address for interference complaints has to be added to the DoC statement or on the label. As an alternative, a 1-800 number written on the users manual (as we have proposed two years ago) has to be installed so citizens know where to call for an interference complaint. A unique number assigned to the product or FCC ID still has to be stored in a central data base (FCC PAL tied to the Internet) controlled by the FCC to enable the public to access the information. The manufacturer or accredited laboratory may file the application electronically to register the number or FCC ID through the central data base (FCC PAL). Of course, electronic safeguards have to be installed (i.e. a company password) before an entry or an application can be filed. Only minimum information needs to be filed or sent electronically:

Declaration of Conformity (DoC)
Applicant's or manufacturers' name and address
Responsible party in US, address, phone, fax, E-mail
Date filed and purpose (Original, Class II, etc.)
Description of product and configuration of all speeds and ports
Maximum CPU speed and/or resolution
Clear photographs or scanned images (> 600 dpi resolution)
Accredited Laboratory that tested the product and test report number
Modifications needed or added during compliance testing.

Please note that the test data is optional because we believe the data submitted is trivial (of course it will say it passed). The accredited testing laboratory or personnel who tested the product is more significant. The test report and test sample, however, must be kept on file by the applicant, manufacturer, responsible party, or laboratory for three years and should be made available to the FCC within 30 days of request. In addition, there should also be a system for checking laboratories. If the laboratory fails the FCC sample test for the third time, the laboratory accreditation should be suspended and only be reinstated if it has proven to the FCC satisfaction that the problem has been corrected.

c. An **increased penalty and fine** is justified to deter unscrupulous manufacturers and laboratories from abusing the system. The European community has a provision for a much higher fine with the authority for recall or notification to all European members to halt shipment when they proposed DoC. The FCC should be more vigorous in enforcement without being so much concerned about the political consequences.

2. **Certification of Components**

Since the FCC has adopted the ANSI C63.4 as the measurement procedure standard for testing digital devices, any changes or modifications to the measurement procedure for testing digital devices should be **addressed to the ANSI committee**. A thorough engineering study must be performed by the committee and its proposal submitted to the engineering community. Only then should the FCC should propose the certification or testing of components. We believe that more time and detailed engineering study are needed in order to address the complexity of testing individual components and the interaction between them.

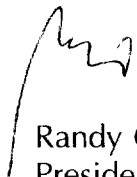
3. **Accreditation**

The laboratory accreditation is an excellent idea only if **all** laboratories (independent, foreign, and manufacturer) go through the same accreditation. In addition, the proposal should also address the accreditation of foreign labs where the US may have difficulty in enforcing compliance (e.g. in China). The accreditation should be fair to all laboratories. Ideally, the FCC should expand the current laboratory listing under Section 2.948 of the Rules to add accreditation. The current proposed accreditation is "reregulation" instead of "deregulation". In addition, there should also be a system for checking laboratories. If the laboratory fails the FCC sample test for the third time, the laboratory accreditation should be suspended and only be reinstated if it has proven to FCC satisfaction that the problem has been corrected.

CONCLUSION :

We are aware that some of our comments may not be "politically popular" in light of Congressional deregulation policies. It is PCTEST Lab's sincere view that the proposal's intent of reducing the 35 day backlog is paramount but the FCC should study not only the positive aspects of such a proposal but also the negative ramifications. The FCC's proposed deregulation should also address valid Public Safety concerns. With the proliferation of digital electronic devices everywhere, especially in airplanes and hospitals, the FCC should remain vigilant and assume responsibility for the compliance of electronic devices.

Sincerely,



Randy Ortanez
President
PCTEST Engineering Laboratory, Inc.

enc.

FAA interferences cases to aircraft systems



U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

APR 21 1995

Mr. Randy Ortanez, President
PCTEST Engineering Laboratory, Incorporated
6660-B Dobbin Road
Columbia, MD 21045

Dear Mr. Ortanez:

This is in response to your request for information in our files regarding interference to aircraft systems due to operation of computers, monitors, video games or computer peripherals. The data we possess and can release is enclosed.

The Federal Aviation Administration (FAA) will release all information unless it is exempt from mandatory release under the Freedom of Information Act. Statutory exemption as set forth in 5 U.S.C. § 552(b)(4) shall govern any information withheld. That statutory exemption treats trade secrets and commercial or financial information obtained from persons as privileged or confidential. Information deemed non-releasable must: (a) have been furnished and accepted in confidence; (b) be such that its disclosure would either impair the Government's ability to obtain necessary information in the future or cause substantial harm to the competitive position of the "person" (i.e., organization) from whom it is obtained.

In this instance, one document has been withheld. It is a pilot report furnished by the International Air Transport Association, and this report is on a "strictly confidential" basis. It is being withheld in response to their direction. Failure to comply would impair the FAA's ability to obtain this type of information in the future.

The undersigned is responsible for the above-described denial. You may request administrative review of these determinations by writing to the following:

Assistant Administrator for Public Affairs
FAA Headquarters
800 Independence Avenue, SW.
Washington, DC 20591



*Commemorating the 50th Anniversary of the
International Civil Aviation Organization*

Your request for reconsideration must be made in writing within 30 calendar days from the date of receipt of this letter and must include all information and arguments relied upon. Your letter must state that it is an appeal from the above-described determination regarding a request made under the Freedom of Information Act. The envelope containing the appeal should be marked "FOIA".

If there are any questions, please contact Mr. Robert Frazier, Spectrum Planning and International Division, at (202) 267-9722.

Sincerely,

A handwritten signature in cursive script, reading "Gerald J. Markey".

Gerald Markey
Director, Office of Spectrum Policy
and Management

10 Enclosures

ACCESSION NO. : 227617
DATE OF OCCURRENCE : 9212
REPORTED BY : FLC
PERSONS FUNCTIONS : FLC,PIC.CAPT; FLC,FO; TRACON,DC.
FLIGHT CONDITIONS : VMC
REFERENCE FACILITY ID : N90
FACILITY STATE : NY
FACILITY TYPE : TRACON
FACILITY IDENTIFIER : N90
AIRCRAFT TYPE : WDB
ANOMALY DESCRIPTIONS : ACFT EQUIPMENT PROBLEM/LESS SEVERE
ANOMALY DETECTOR : COCKPIT/FLC
ANOMALY RESOLUTION : NOT RESOLVED/DETECTED AFTER-THE-FACT
ANOMALY CONSEQUENCES : NONE
NARRATIVE : NORMAL TKOF RWY 13R JFK, CLRED TO CLB AND
MAINTAIN 5000' AND HDG OF 155 DEG. AFTER CALLING GEAR UP AND
HDG SELECT, I SCANNED GEAR LIGHTS, ENG INST, TFC WATCH AND
COMMAND STEER BAR. FOLLOWED COMMAND BAR TO 155 DEG HDG ON
HSI. F/O CALLED "CHK HDG," AND F/E POINTED TO MAG COMPASS
READING 100 DEG. I BEGAN R TURN USING MAG COMPASS AND F/O
SIMULTANEOUSLY INITIATED FAST SLAVE ON BOTH SIDES (BECAUSE
HIS CARD WAS PRECESSING WITH WINGS LEVEL), AND HE NOTIFIED
DEP, "WE HAVE A HDG PROBLEM." THEY RESPONDED, "I CAN HELP,"
AND GAVE R TURN FOR VECTOR, WHICH I FLEW ON MAG COMPASS. F/O
THEN COMPLETED SECOND FAST SLAVE CYCLE. ALL COMPASS SYS
OPERATED NORMALLY FOR REMAINDER OF FLT. LATER CHK WITH F/A
REVEALED FIRST CLASS PAX WAS USING LAPTOP COMPUTER ON GND AND
IN FLT.

ACCESSION NUMBER : 55736
 DATE OF OCCURRENCE : 8607
 REPORTED BY : FLC; ; ;
 PERSONS FUNCTIONS : FLC,PLT; ARTCC,RDR; MISC,PAX;
 FLIGHT CONDITIONS : VMC
 REFERENCE FACILITY ID : ACY
 FACILITY STATE : NJ
 FACILITY TYPE : ARTCC;
 FACILITY IDENTIFIER : ZNY;
 AIRCRAFT TYPE : SMT;
 ANOMALY DESCRIPTIONS : ERRONEOUS PENETRATION OR EXIT AIRSPACE;
 TRACK OR HDG DEVIATION; NON ADHERENCE LEGAL RQMT/CLNC;
 ANOMALY DETECTOR : ATC/CTLR;
 ANOMALY RESOLUTION : FLC RETURNED ACFT TO ORIGINAL CLNC OR
 INTENDED COURSE; CTLR INTERVENED; CTLR ISSUED NEW CLNC;
 ANOMALY CONSEQUENCES : NONE;
 SITUATION REPORT SUBJECTS : PHYSICAL FACILITY/NAVAID;
 NARRATIVE : DEPARTED MTN FOR FRG. CLRNC FILED (DRCT

SWANN INTXN, V44 ACY, V184 BEAMS INXTN, V44 SATES INTXN, DRCT
 FRG). FLT DEPARTED AND AFTER SEVERAL VECTORS CLRD DRCT TO ENO.
 CROSSED ENO TRACKED OUTBND 095 DEG AND BEFORE REACHING LEEAH WAS
 CLRD DRCT TO ACY VOR CROSSED ACY AT 7000' AND TRACKED OUTBND 065
 DEG ON THE ACY 065 DEG RADIAL ENRTE TO MURFE. AT THE 24 MI DME FIX,
 NY CENTER GAVE ME A COURSE CHANGE TO INTERCEPT V44 AS I WAS 12 MI
 E OF THE AIRWAY (V184) AND APPEARED TO BE TRACKING 095 DEG. I
 COMPLIED, CHECKED ALL MY EQUIPMENT AND ASKED CENTER IF THEY HAD
 THIS TROUBLE WITH OTHER AIRPLANES AS I HAD EXPERIENCED THIS BEFORE
 WITH 3 OTHER ACFT THAT I OFTEN FLY OVER THE SAME ROUTE. CENTER
 REPLIED YES, OTHER ACFT HAD SIMILAR PROBLEMS AT LOW ALTS BUT I
 APPEARED TO BE UNUSUALLY FAR OFF. I CHECKED EVERYTHING TO BE SURE
 IT HAD BEEN PROPERLY SET AND FOUND NO ERRORS. THE EQUIPMENT IS
 GOOD, HAS JUST RECENTLY BEEN CHECKED, AND I HAVE FOUND NO REASON
 FOR THE STATED ERROR. HOWEVER, THERE WAS AN UNDERCAST AND I HAD NO
 VISUAL CONTACT WITH THE GND. I AM SURE THE FLT PLAN WAS CORRECT. I
 CHECKED ALL THE EQUIPMENT CAREFULLY DURING THE REMAINDER OF THE
 FLT, COMPARED THE VORS TO EACH OTHER (WELL WITHIN LIMITS), DID AN
 ILS APCH FOR LNDG WITH NO TROUBLE AND LATER IN THE AFTERNOON
 REVERSED THE ROUTE WITH NO TROUBLE. SO NO EXPLANATION IN THE ACFT.
 HOWEVER, IN PREVIOUS TIMES IN THIS AND 3 OTHER ACFT, I HAVE
 NOTICED THAT IN THE VICINITY OF THE MURFE AND BEAMS INTXNS AT
 7000' (CENTER ALWAYS PUTS US AT 7000' IN THIS AREA), VISUAL
 SIGHTING OF LAND, COMPARED TO DME READING FROM ACY, COMPARED TO
 THE VOR RADIAL FROM ACY, ALL DISAGREE WITH THE OTHER. I WONDER DO
 WE HAVE ELECTRONIC INTERFERENCE FROM MILITARY ELECTRONICS ON THE
 GROUND OR IN THE AIR? THE SAME THING ALSO SEEMS TO HAPPEN NEAR THE
 BRIGS AND HARBO INTXNS ON V139 AT TIMES. PLEASE NOTE I CHECKED 2
 VOR RADIAL SELECTIONS, RNAV SELECTOR POSITION, 2 VOR FREQ
 SELECTIONS, AUDIO CONFIRMED FREQ SELECTIONS, AND CHECKED SLAVED
 COMPASS OPERATION -- ALSO DME SELECTION ALL DONE IMMEDIATELY.

SYNOPSIS : CPR SMT NAVIGATION ERROR FLYING V184 NE
 OF ACY. REPORTER SUSPECTS ELECTRONIC INTERFERENCE FROM PASSENGER'S
 PORTABLE COMPUTER. DURING A CALLBACK REPORTER SAID HE HAD A
 PASSENGER THAT OCCASIONALLY CARRIED AND USED A PORTABLE COMPUTER
 WHILE FLYING. HE CHECKED HIS RECORDS AND NOTED THAT THIS PASSENGER
 WAS ON BOARD THE DAY OF THE INCIDENT

ACCESSION NUMBER : 101592
 DATE OF OCCURRENCE : 8901
 REPORTED BY : FLC; ; ;
 PERSONS FUNCTIONS : FLC,FO; FLC,PIC.CAPT; MISC,PAX;
 FLIGHT CONDITIONS : VMC
 REFERENCE FACILITY ID : LOU
 FACILITY STATE : KY
 FACILITY TYPE : ARTCC;
 FACILITY IDENTIFIER : ZME;
 AIRCRAFT TYPE : MLG;
 ANOMALY DESCRIPTIONS : OTHER; ACFT EQUIPMENT PROBLEM/LESS
 SEVERE;
 ANOMALY DETECTOR : COCKPIT/FLC;
 ANOMALY RESOLUTION : FLC OVERCAME EQUIP PROBLEM; OTHER;
 ANOMALY CONSEQUENCES : NONE;
 SITUATION REPORT SUBJECTS : OTHER; PROC OR POLICY/FAA;
 NARRATIVE : DURING CRUISE WE WERE ISSUED DIRECT
 LOUISVILLE VOR. HAD PROBLEM WITH NEEDLE SWINGS. ASKED CENTER IF
 LOUISVILLE WAS OK. THEY SAID ALL OK. ASKED F/A TO CHECK CABIN FOR
 ELECTRONICS. FOUND ELECTRONIC CHESSE PLAYER ON. WHEN
 TURNED OFF CDI NEEDLES WERE STABLE AND WE PROCEEDED DIRECT TO VOR.
 SYNOPSIS : ACR MLG NAVIGATION RECEPTION PROBLEM
 CAUSED BY RF SIGNAL INTERFERENCE FROM PASSENGER ELECTRONIC CHESSE
 SET.
 REFERENCE FACILITY ID : LOU
 FACILITY STATE : KY
 DISTANCE & BEARING FROM REF. : 40,,SE
 MSL ALTITUDE : 28000,28000

ACCESSION NUMBER : 139284
 DATE OF OCCURRENCE : 9002
 REPORTED BY : FLC; ; ; ;
 PERSONS FUNCTIONS : FLC,FO; FLC,PIC.CAPT; FLC,SO; ARTCC,RDR;
 MISC,PAX;
 FLIGHT CONDITIONS : VMC
 REFERENCE FACILITY ID : FSM
 FACILITY STATE : AR
 FACILITY TYPE : ARTCC;
 FACILITY IDENTIFIER : ZME;
 AIRCRAFT TYPE : WDB;
 ANOMALY DESCRIPTIONS : OTHER; TRACK OR HDG DEVIATION;
 ANOMALY DETECTOR : COCKPIT/FLC;
 ANOMALY RESOLUTION : FLC OVERCAME EQUIP PROBLEM;
 ANOMALY CONSEQUENCES : NONE;
 SITUATION REPORT SUBJECTS : ACFT EQUIPMENT; PROC OR POLICY/COMPANY;
 NARRATIVE : F/Q'S VOR ON 110.4, (FORT SMITH) NEEDLE

MOVING L TO R , FLAG ON-OFF, VERY ERRATIC. F/A FOUND
 PORTABLE ELECTRONIC GAME (SELF-CONTAINED, NO REMOTE
 CTL) IN USE IN FORWARD PAX SECTION. GAME WAS TURNED OFF, VOR
 INDICATION RETURNED TO NORMAL. MY COMPANY FLT OPERATION MANUAL
 ALLOWS PORTABLE ELECTRONIC GAMES TO BE USED BY PAX IF THEY DO NOT
 HAVE A REMOTE CTL. I HAVE HEARD OF THIS SAME GAME CAUSING VOR AND
 TRANSPONDER OUTAGE IN WDB. CALLBACK CONVERSATION WITH RPTR
 REVEALED FOLLOWING INFO. CAPT CLAIMED HE HAD SAME TYPE OF VOR
 SIGNAL LOSS WHEN A NINTENDO GAME WAS BEING PLAYED IN THE CABIN. HE
 ASKED THE CABIN ATTENDANT TO CHK AND SHE ADVISED THERE WAS ONE IN
 THE FORWARD CABIN. I DO NOT KNOW HOW IT WORKS, ALL I KNOW IS THAT
 WHEN IT WAS TURNED OFF MY VOR SIGNAL CAME BACK ON. WHY IT DID NOT
 AFFECT BOTH VOR'S I CAN ONLY GUESS IT WAS BECAUSE OF THE ANTENNA
 LOCATION. RADIO EQUIP IN A COMPARTMENT BELOW THE FORWARD PAX CABIN
 SHOULD NOT HAVE BEEN A FACTOR.

SYNOPSIS : NINTENDO ELECTRONIC GAME BEING PLAYED
 IN FORWARD CABIN OF WDB ALLEGEDLY INTERFERRED WITH VOR SIGNAL ON
 FSM VOR 110.4.

REFERENCE FACILITY ID : FSM
 FACILITY STATE : AR
 MSL ALTITUDE : 39000,39000

ACCESSION NUMBER : 157886
 DATE OF OCCURRENCE : 9009
 REPORTED BY : FLC; FLC;
 PERSONS FUNCTIONS : FLC,FO; FLC,PIC.CAPT;
 FLIGHT CONDITIONS : VMC
 REFERENCE FACILITY ID : YNG
 FACILITY STATE : OH
 FACILITY TYPE : ARTCC; VOR;
 FACILITY IDENTIFIER : ZOB; YNG;
 AIRCRAFT TYPE : MLG;
 ANOMALY DESCRIPTIONS : TRACK OR HDG DEVIATION; OTHER;
 ANOMALY DETECTOR : ATC/CTLR;
 ANOMALY RESOLUTION : CTLR ISSUED NEW CLNC;
 ANOMALY CONSEQUENCES : NONE;
 SITUATION REPORT SUBJECTS : PHYSICAL FACILITY/NAVAID;
 NARRATIVE : FLT FROM BOS TO YNG WAS FILED TO

PROCEED DIRECT FROM ETG VOR TO YNG VOR. UPON STATION PASSAGE (ETG) BOTH NAV RADIOS WERE TURNED TO YNG VOR. DME REGISTERED ON BOTH HSI'S AND BOTH RMI'S POINTED TO A 180 DEG TURN. THE HSI COURSE NEEDLE WAS SELECTED TO 180 DEGS AND A LEFT TURN WAS INITIATED TO THAT HDG. AT 120 DME (YNG) ATC CORRECTED OUR HDG TO 260 DEGS. AFTER A FEW MINS THE TRUE VOR RECEPTION DEPICTED 80 DME E OF YNG. UPON RECEIVING THE ATC CLNC TO TURN TO A HDG OF 260 DEGS, THE CREW SUSPECTED INTERFERENCE FROM AN ELECTRONIC DEVICE IN THE CABIN.. WE REQUESTED THE LEAD F/A INSPECT THE CABIN FOR PORTABLE ELECTRONIC DEVICES. SHE RETURNED STATING 23 PAX WERE USING AM/FM CASSETTE "WALKMAN" TYPE PLAYERS AND 1 PAX WAS USING A PORTABLE COMPUTER. SHE FURTHER STATED THAT SHE HAD REQUESTED, VIA PAX ANNOUNCEMENT, THAT THE USE OF THESE DEVICES CEASE AS THEY MIGHT INTERFERE WITH THE NAV RADIOS ON THE ACFT. THE FLT PROCEEDED W/O FURTHER INCIDENT. TO REMEDY THE SITUATION FROM OCCURRING IN THE FUTURE WE, AS FLT CREW MEMBERS, SHOULD: BRIEF F/A'S TO RECOGNIZE THE IMPORTANCE OF CHKING AND BRIEFING PAX ON THE USE OF ELECTRONIC DEVICES, AND REF THE NAV CHARTS FOR A HDG EVEN WHEN NAVIGATING OFF AN ARMY. SUGGEST THE COMPANY OR FAA PUBLISH A NOTAM CAUTIONING AIRMEN FOR FALSE INDICATIONS OF THE YNG VOR NEAR THE ETG VOR. CALLBACK CONVERSATION WITH RPTR REVEALED THE FOLLOWING: CALLED YNG FSS AND DISCUSSED RELIABILITY AND NOTAMS ON YNG VOR. SPECIALIST NOT AWARE OF ANY NOTAMS OR NOTE ON HIGH ALT CHART STATING THE 130 DEG R WAS UNRELIABLE. HAS NOT HEARD OF ANY PIREPS OR CTLR RPTS PERTAINING TO THE VOR. SUPPLEMENTAL INFO FROM ACN 157885: WE OBSERVED A FALSE LOCK-ON TO YNG VOR. OUR POS WAS 10 NM W OF ETG VOR, AT FL260. THE RESULT OF THIS FALSE LOCK-ON WAS OUR INITIAL TURN TO A HDG OF 180 DEGS, ALMOST 90 DEGS OFF COURSE. THE COCKPIT INDICATION SHOWED YNG VOR (FREQ 109.0) AT 180 DEGS AND 120 NM. WE MAY HAVE BEEN RECEIVING A SIGNAL FROM SHELBYVILL NEAR NASHVILLE SINCE IT HAS THE IDENTICAL (FREQ 109.0) FREQ AS YNG.

SYNOPSIS : ACR RECEIVES ERRONEOUS VOR SIGNAL AND TURNS OFF COURSE. ATC ISSUED NEW HEADING.

REFERENCE FACILITY ID : YNG
 FACILITY STATE : OH
 DISTANCE & BEARING FROM REF. : 47,,E
 MSL ALTITUDE : 26000,26000

ACCESSION NUMBER : 166548
 DATE OF OCCURRENCE : 9012
 REPORTED BY : FLC; ;
 PERSONS FUNCTIONS : FLC,FO; FLC,PIC.CAPT; ARTCC,RDR;
 FLIGHT CONDITIONS : VMC
 REFERENCE FACILITY ID : SHV
 FACILITY STATE : LA
 FACILITY TYPE : ARTCC;
 FACILITY IDENTIFIER : ZFW;
 AIRCRAFT TYPE : MLG;
 ANOMALY DESCRIPTIONS : ACFT EQUIPMENT PROBLEM/LESS SEVERE;
 TRACK OR HDG DEVIATION;
 ANOMALY DETECTOR : ATC/CTLR;
 ANOMALY RESOLUTION : FLC RETURNED ACFT TO ORIGINAL CLNC OR
 INTENDED COURSE; CTLR INTERVENED;
 ANOMALY CONSEQUENCES : NONE;
 SITUATION REPORT SUBJECTS : OTHER;
 NARRATIVE : ACFT TRACKING ON N4 E OF SHV WHEN ITS
 NAV COMPASS AND CDI BEGAN TO OSCILLATE 5-10 DEGS LEFT AND RIGHT OF
 COURSE. SEVERAL MINS LATER ZFW RPTED US TO BE 8 NM N OF COURSE AND
 GAVE US A HDG TO FLY TO GET BACK ON COURSE. SIMULTANEOUSLY, WE HAD
 THE F/A'S CHK FOR COMPUTERS/RADIOS AMONG THE PAX AND SEVERAL WERE
 FOUND TO BE IN USE. ONCE THESE WERE TURNED OFF, THE ACFT NAV
 SYSTEMS FUNCTIONED NORMALLY. CORRECTIVE ACTION: GREATER PUBLIC
 AWARENESS, AND GOVT AND INDUSTRY ENFORCEMENT TO ELIMINATE THE
 GROWING PROB WITH ELECTROMAGNETIC INTERFERENCE.
 SYNOPSIS : POSSIBLE ELECTRONIC EMISSIONS
 INTERFERING WITH NAVIGATION OF ACFT. HEADING TRACKING DEVIATION.
 REFERENCE FACILITY ID : SHV
 FACILITY STATE : LA
 DISTANCE & BEARING FROM REF. : ,,E
 MSL ALTITUDE : 33000,33000

ACCESSION NUMBER : 172261
 DATE OF OCCURRENCE : 9103
 REPORTED BY : FLC; ;
 PERSONS FUNCTIONS : FLC,PIC.CAPT; FLC,FO; ARTCC,RDR;
 FLIGHT CONDITIONS : VMC
 REFERENCE FACILITY ID : CRL
 FACILITY STATE : MI
 FACILITY TYPE : ARTCC;
 FACILITY IDENTIFIER : ZOB;
 AIRCRAFT TYPE : MLG;
 ANOMALY DESCRIPTIONS : OTHER; TRACK OR HDG DEVIATION;
 ANOMALY DETECTOR : COCKPIT/FLC; COCKPIT/EQUIPMENT;
 ATC/CTLR;
 ANOMALY RESOLUTION : FLC OVERCAME EQUIP PROBLEM; CTLR ISSUED
 NEW CLNC;
 ANOMALY CONSEQUENCES : NONE;
 SITUATION REPORT SUBJECTS : ACFT EQUIPMENT; OTHER;
 NARRATIVE : FLT WAS PROCEEDING FROM ORD-BDL. APPROX
 30 MI W OF CRL (CAPLETON) OR ACFT ACCEPTED CLRNC OF PRESENT POS
 RNAV (OMEGA) DIRECT JAMESTOWN. APPROX 12 MINS LATER CTR ADVISED
 THAT OUR HDG FOR JAMESTOWN MUST BE IN ERROR AND GAVE US A VECTOR.
 CREW UTILIZED ONLY VOR NAV FOR REST OF FLT BUT NOTICED ERRATIC
SIGNALS ON ALL VORS. FINALLY, CAPT THOUGHT TO ASK IF ANY
ELECTRONIC DEVICES WERE IN USE. IT WAS DETERMINED THAT A PAX IN
 SEAT 9-D (MLG ACFT) WAS UTILIZING A LAPTOP COMPUTER. WHEN HE WAS
 ASKED TO TURN IT OFF, THE FLT MGMNT ANNUNCIATOR PANEL LIGHTS
 IMMEDIATELY BRIGHTENED DRAMITICALLY AND ALL NAV AIDS RETURNED TO
 NORMAL WITH NO FURTHER ERRATIC INDICATIONS NOTED. IT SHOULD BE
 NOTED THAT OUR FLT MANUAL SPECIFICALLY PERMITS THE USE OF LAPTOP
 COMPUTERS. I BELIEVE THIS POLICY SHOULD BE CHANGED TO PROHIBIT
 THIS TYPE OF COMPUTER'S USE. I HAVE DEBRIEFED THIS INCIDENT WITH
 MY COMPANY ALSO.
 SYNOPSIS : ACR REPORTER STATES THAT LAP TOP
 COMPUTER CAUSED ACFT TO BE OFF COURSE.
 REFERENCE FACILITY ID : CRL
 FACILITY STATE : MI
 MSL ALTITUDE : 37000,37000

ACCESSION NO. : 215056
 DATE OF OCCURRENCE : 9207
 REPORTED BY : FLC
 PERSONS' FUNCTIONS : FLC, PIC, CAPT;
 FLIGHT CONDITIONS : VMC
 REFERENCE FACILITY ID : PHX
 FACILITY STATE : AZ
 FACILITY TYPE : ARPT
 FACILITY IDENTIFIER : PHX
 AIRCRAFT TYPE : LGT
 ANOMALY DESCRIPTIONS : ACFT EQUIPMENT PROBLEM/CRITICAL; TRACK OR
 HDG DEVIATION; NON ADHERENCE LEGAL RQMT/CLNC; OTHER
 ANOMALY DETECTOR : COCKPIT/FLC; ATC/CTLR
 ANOMALY RESOLUTION : FLC OVERCAME EQUIP PROBLEM; FLC RETURNED
 ACFT TO ORIGINAL CLNC OR INTENDED COURSE; CTLR ISSUED NEW
 CLNC
 ANOMALY CONSEQUENCES : NONE
 NARRATIVE : FLEW THIS ACFT ON 3 PRECEDING FLTS: MLU-
 SHU, SHU-DFW, DFW-PHX. EXPERIENCED NO RADIO PROBLEMS. DURING
 ENG START, TAXI AND TAKING RWY 8L AT PHX, HAD NO COMM
 PROBLEMS. AFTER CLNC TO TAXI INTO POS AND HOLD, WE HEARD
 NOTHING FOR 90 SECS OR MORE. WE TRIED TO TRANSMIT AND HEARD A
 LOUD SQUEAL. WE TRIED COMM 2 WITH SAME RESULT. WE THEN HEARD
 PHX TWR TELL US TO TAXI CLR OF RWY. AS THE ACFT MOVED
 FORWARD, THE F/O ESTABLISHED CONTACT WITH TWR AND SAID WE
 MUST HAVE BEEN IN A BLIND SPOT. TWR SAID THEY HEARD US OKAY
 AND TOLD US TO HOLD OUR POS. AFTER 20 SECS OR SO, TWR CLRED
 US FOR TKOF. WE WERE TO FLY THE EAGLE 2 DEP. JUST PRIOR TO
 TKOF, THE RADIO SQUAWKED, BUT WE COULD STILL HEAR
 TRANSMISSIONS. AFTER WE BECAME AIRBORNE WE LOST COMM 1 AND 2.
 WE COULD NOT TRANSMIT OR RECEIVE. ALL 3 OF US TRIED BOTH
 RADIOS. WE CHKED FOR STUCK MIKES, CB'S, AND PWR SWS. I
 INSTRUCTED S/O TO MAKE PA FOR PAX NOT TO USE ELECTRONIC
 DEVICES. I FLEW THE EAGLE 2, BUT NOT AS PRECISELY AS WE
 NORMALLY WOULD. WE WERE AT 5700' WITH NO CONTACT, AND I WAS
 INITIATING A TURN TO THE W TO ESTABLISH A DOWNWIND FOR RWY 8L
 AND WAS ABOUT TO ASK F/O TO SET IN LOST COMM TRANSPONDER
 CODE, WHEN WE HEARD PHX TWR ON COM 2 (WE HAD TUNED BOTH
 RADIOS TO TWR FREQ). THEY DIRECTED US TO CLB TO 15,000' ON
 THE DEP. WE WERE ABLE TO MAINTAIN COM WITH TWR DEP AND ABQ
 CENTER ON COMM 2. AS WE GOT HIGHER WE REGAINED COMM 1 RADIO.
 AT FIRST I THOUGHT WE HAD LCL GND INTERFERENCE BUT, AS THE
 PROBLEM STAYED WITH US, I BECAME CONVINCED OF ELECTRICAL
 INTERFERENCE FROM INSIDE OUR ACFT. I STRONGLY SUSPECT A PAX
 WAS USING A CELLULAR PHONE. THERE WERE ALSO SEVERAL NOTEBOOK
 COMPUTERS AND AT LEAST ONE HAND HELD [COMPANY] GAME IN THE
 CABIN. I WILL APPRECIATE ANY INFO YOU MIGHT HAVE ABOUT
 SIMILAR OCCURRENCES AT PHX OR ANYWHERE ELSE.

CAPTAIN'S IRREGULARITY REPORT

DATE THIS
REPORT 2/28/91

FLIGHT NO. 1643 ORIGINATING STATION BTR DATE ORIGINATED 2/28/91 AIRCRAFT TYPE B727 NO. N- 836

EMERGENCY DECISION ☐ OVERWEIGHT LANDING ☐ ENGINE OUT ☐ DEVIATION FROM REGS ☐ DUMPING FUEL ☐ BIRD STRIKE ☐ STATIC DISCHARGE ☐

MECH/COMM PROBLEM ☐ ILL-INJURED PASSENGER ☐ ILL-INJURED CREWMEMBER ☐ PASSENGER MISCONDUCT ☐ TURBULENCE ☐ OTHER ☒

Flight departed BTR at 1229/1235 UTC Irregularity occurred at 1300 UTC In vicinity of

GRW during: Takeoff ☐ Climb ☐ Cruise ☒ Descent ☐ Landing ☐ Other ☐

Flight landed BNA at 1343/1349 UTC
ON / IN

Engine failure or stoppage was reported at _____ UTC

AIRCRAFT WAS LOST APPROXIMATELY _____ lbs. overweight. Dumped _____ lbs. fuel.

WEATHER - VFR or IFR IF IFR GIVE ACTUAL WEATHER. _____

EXPLAIN IRREGULARITY AND ACTION TAKEN (give full details):

Passenger in 16C was operating a computer, (Compaq SLT 286 with Hard Drive) in flight. We experienced a 20° needle spread on the RMDI indicator with both VHF Nav radios turned to the same station. When computer was turned off the needle indications returned to normal.

Captain R. P. Louthan Base DFW
R.P. Louthan

I have reviewed the above and concur / ~~disconcur~~ with the action taken by the Captain.

Division Manager/Base Manager Flight Y.W. Harden Date 3/4/91

I concur / do not concur / with the action taken by the Captain.

Managing Director Flight Operations _____ Date _____

This form is to be prepared and signed by the Captain. He will also sign one additional blank form and forward the original plus the single signed form to his Division Manager/Base Manager Flight within 24 hours of occurrence of irregularity.

The Division Manager/Base Manager Flight will sign and forward the original and two photo copies to the Managing Director Flight Operations/Technical within five days after the irregularity.

Captain's Irregularity Reports for Training flights shall be signed by the Managing Director Training/Std. and then forwarded to the Managing Director Operations - Technical per the above.

AS FORM OF THE
PRINTED IN U.S.A.

CAPTAIN'S IRREGULARITY REPORT

DATE THIS
REPORT 12/20/91

FLIGHT NO. 258 ORIGINATING STATION BNA DATE ORIGINATED 12/19/91 AIRCRAFT TYPE 580 NO. 566

EMERGENCY DECISION ☐ OVERWEIGHT LANDING ☐ ENGINE OUT ☐ DEVIATION FROM REGS ☐ DUMPING FUEL ☐ BIRD STRIKE ☐ STATIC DISCHARGE ☐
MECH/COMM PROBLEM ☒ ILL-INJURED PASSENGER ☐ ILL-INJURED CREWMEMBER ☐ PASSENGER MISCONDUCT ☐ TURBULENCE ☐ OTHER ☐

Flight departed BNA at 1 UTC Irregularity occurred at _____ UTC In vicinity of _____
during: Takeoff _____ Climb _____ Cruise _____ Descent _____ Landing _____ Other _____

Flight landed CLE at 1 UTC
ON / IN

Engine failure or stoppage was reported at _____ UTC

Airplane was landed approximately _____ lbs. overweight Dumped _____ lbs. fuel

WEATHER - VFR or IFR? IF IFR GIVE ACTUAL WEATHER _____

EXPLAIN IRREGULARITY AND ACTION TAKEN (give full details):

In cruise, the FO's VOR would not stay centered and wandered from extreme left to right. My VOR was normal. The Flight Attendants checked for electronics and found a Seiko tape player in 11D, a JVC CD player in 3F, and a Toshiba portable computer model PA7027U in seat 18D. I requested that all be turned off and the VOR's returned to normal. We were on the descent so I could not try to determine which one was causing the problem, or if it was the combination of the three.

Captain H. Barrett Base PFW
H.K. Barrett

I have reviewed the above and concur / ~~do not concur~~ / with the action taken by the Captain.

Division Manager/Base Manager Flight H.W. Harden Date 1/17/91

I concur / do not concur / with the action taken by the Captain.

Managing Director Flight Operations _____ Date _____

This form is to be prepared and signed by the Captain. He will also sign one additional blank form and forward the original plus the single signed form to his Division Manager/Base Manager Flight within 24 hours of occurrence of irregularity.

The Division Manager/Base Manager Flight will sign and forward the original and two photo copies to the Managing Director Flight Operations/Tex within five days after the irregularity.

Captain's Irregularity Reports for Training flights shall be signed by the Managing Director Training/Side, and then forwarded to the Managing Director Operations - Technical per the above.